

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



**U.S. Department of Energy
Golden Field Office**

Recovery Act: Energy Efficient Information and Communication Technology

Funding Opportunity Announcement Number: DE-FOA-0000107

Announcement Type: Initial

CFDA Number: 81.086

Issue Date: 06/02/2009

Application Due Date: 07/21/2009, 11:59 PM Eastern Time

NOTE: Questions regarding the content of this announcement must be submitted through FedConnect. Applicants must be registered in FedConnect to submit or view Questions.

APPLICATION SUBMISSION, FEDCONNECT QUICK START GUIDE, REGISTRATION REQUIREMENTS, AND WHERE TO SUBMIT QUESTIONS

1. Application Submission

APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT AT <https://www.fedconnect.net/> TO BE CONSIDERED FOR AWARD (unless you have system-to-system capability with Grants.gov). The Adobe Application Package identified in Part IV. C. is posted as an attachment to this FOA (in FedConnect). It is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission.

2. FedConnect Quick Start Guide:

Use this guide to assist you with FedConnect:

https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf

3. Registration Requirements

To submit an application in response to this FOA, Applicants must be registered with FedConnect. Before you can register with FedConnect, you will need the following:

- A. Your company's DUNS (including plus 4 extension if applicable). If you don't know your company's DUNS or if your company does not have a DUNS you can search for it or request one at <http://fedgov.dnb.com/webform/displayHomePage.do>.
- B. A federal Central Contractor Registration (CCR) account. If your company is not currently registered with CCR, please register at www.ccr.gov before continuing with your FedConnect registration.
- C. Possibly, your company's CCR Marketing Partner Identification Number (MPIN). If you are the first person from your company to register, FedConnect will need to create a company account. Only a person who knows your company's CCR MPIN can do this. To find out who this is in your company, go to <http://www.ccr.gov/> and click **Search CCR**. Once you've found your company, locate the Electronic Business Point of Contact.

After the initial FedConnect account is created, employees can register themselves without the MPIN. If you are not sure whether your company has an account with FedConnect, don't worry. Complete the registration form and FedConnect will let you know. (PLEASE REFER TO THE FEDCONNECT QUICK START GUIDE FOR QUESTIONS)

Applicants who are not registered with CCR and FedConnect, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible. For those Applicants already registered in CCR, the CCR registration must be updated annually at <http://www.ccr.gov/Renew.aspx>.

4. Questions

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect, to submit questions, and to receive responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been distributed.

Questions pertaining to the submission of applications through FedConnect should be directed by e-mail to support@FedConnect.net or by phone to FedConnect Support at 1-800-899-6665.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

A. INTRODUCTION: AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

Projects under this Funding Opportunity Announcement (FOA) will be funded, in whole or in part, with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). The Recovery Act's purposes are to stimulate the economy and to create and retain jobs. The Act gives preference to activities that can be started and completed expeditiously, including a goal of using at least 50 percent of the funds made available by it for activities that can be initiated not later than June 17, 2009. Due to the schedule of this FOA, the preceding date will not affect applications submitted under this FOA. Accordingly, special consideration will be given to projects that promote and enhance the objectives of the Act, especially job creation, preservation and economic recovery, in an expeditious manner.

Be advised that special terms and conditions may apply to projects funded by the Act relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Prohibition on use of funds for gambling establishments, aquariums, zoos, golf courses or swimming pools;
- Ensuring that iron, steel and manufactured goods are produced in the United States;
- Ensuring wage rates are comparable to those prevailing on projects of a similar character;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

These special terms and conditions will be based on provisions included in Titles XV and XVI of the Act. The exact terms and conditions will be provided when available.

The Office of Management and Budget (OMB) has issued Initial Implementing Guidance for the Recovery Act. See [M-09-10, Initial Implementing Guidance for the American Recovery and Reinvestment Act of 2009](#). OMB will be issuing additional guidance concerning the Act in the near future. Applicants should consult the DOE website, www.energy.gov, the OMB website <http://www.whitehouse.gov/omb/>, and the Recovery website, www.recovery.gov regularly to keep abreast of guidance and information as it evolves.

Recipients of funding appropriated by the Act shall comply with requirements of applicable Federal, State, and local laws, regulations, DOE policy and guidance, and instructions in this FOA, unless relief has been granted by DOE. Recipients shall flow down the requirements of applicable Federal, State and local laws, and regulations, DOE policy and guidance, and instructions in this FOA to subrecipients at any tier to the extent necessary to ensure the recipient's compliance with the requirements.

Be advised that Recovery Act funds can be used in conjunction with other funding, as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and related OMB Guidance. Applicants for projects funded by sources other than the Recovery Act should plan to keep separate records for Recovery Act funds and to ensure those records comply with the requirements of the Act. Funding provided

through the Recovery Act that is supplemental to an existing grant is one-time funding.

Applicants should begin planning activities for their first tier subawardees, including obtaining a DUNS number (or updating the existing DUNS record), and registering with the Central Contractor Registration (CCR). The extent to which subawardees will be required to register in CCR will be determined by OMB at a later date.

B. DESCRIPTION

The energy used by our nation's vital telecommunications and data centers is growing at an alarming rate. As information technology and communications services continue to slowly converge, the data center and telecommunications industries face increasingly similar challenges to control the power usage of their microprocessors or servers and supporting power and cooling systems. The electricity consumed in data centers and telecom systems is already three percent of the U.S. total and growing rapidly. In the face of growing global energy demand, uncertain energy supplies, and volatile energy prices, innovative solutions are needed to radically advance the energy efficiency of these systems, which represent the engine of the American economy today. Enhanced energy efficiency in the central offices and data centers supporting our information, communications technology (ICT) systems will enhance U.S. energy and economic security.

This FOA seeks to develop new technologies to dramatically improve energy efficiency in ICT with an the emphasis on new technologies that can be commercialized within the next three to five years, and to demonstrate through field testing highly energy efficient, emerging technologies that are ready for or are in the initial stage of commercial introduction.

The Research and Development (R&D) covered by this FOA will be subject to stage-gate categorization. Applicants should read and understand the differentiation between stages presented in the Industrial Technologies Program (ITP) Stage-Gate Innovation Management Guidelines which are at:

http://www1.eere.energy.gov/industry/financial/pdfs/itp_stage_gate_overview.pdf

The Concept Definition Studies and Information and Communication Technologies Research and Development (R&D) for Energy Efficiency presented in sections I and II below, respectively, require a team capable of and experienced in 1) research and development, 2) manufacturing the technology proposed, 3) bringing the technology to the end user through sales and marketing, and 4) serving as an end user to demonstrate the efficacy of the technology proposed. Some organizations may possess more than one of these capabilities, but overall the team must possess all four capabilities. ITP has created a web site to enable organizations intending to submit an application in response to this solicitation to partner with other organizations with complementary capabilities. This web site is at:

http://sites.energetics.com/ICT_matchmaker09/.

Because this FOA is funded through appropriations from the Recovery Act, applicants should understand that all funds provided by ITP are expected to be expended within a two year (24 month) period from the date of award, and that future ITP funding for continuing projects in this area is not now contemplated. Thus, some applicants may plan to use DOE funding to accelerate R&D progress so that a technology can be commercialized by a team member after the two year period. Other applicants may use the funding to advance the state of development of the technology to increase its attractiveness to R&D funding sources other than ITP.

Applicants to all areas of interest (i.e., I, II and III below) of this FOA are required to estimate the energy benefits of the proposed technology using the internet-based project evaluation tool available at http://sites.energetics.com/ICT_benefits09/. This model enables the user to estimate

energy savings associated with the use of the proposed technology. Step-by-step instructions for using the model are included at the website. All applications must include printouts of the model's four worksheets: "Description", "Unit Inputs", "Market Inputs", and "Results Sheet".

There are three broad areas of interest. Each proposal may address only one of these areas of interest and must be a standalone proposal. The areas of interest are I) Concept Definition Studies for Energy Efficient Information and Communications Technology; II) Information and Communications R&D For Energy Efficiency; and III) Demonstration and Field Testing of Highly Energy Efficient and Emerging Technologies for Data Center or Telecommunications Use.

I. Concept Definition Studies for Energy Efficient Information and Communication Technology

Technologies considered for Concept Definition Studies must be at Stage Two as defined by the *ITP Stage-Gate Innovation Management Guidelines*. The proposed concept-definition study will focus on a specific, promising ICT technology that offers the potential for major energy, carbon, and economic benefits. While the focus technology must be in the early stages of research, the study will also indicate how the technology will eventually fit into commercial markets. The study will identify the technical barriers and critical R&D paths for developing a commercial application or product that addresses a significant market opportunity.

The proposed team must be qualified to define the capabilities of the technology by conducting studies, exploring relevant scientific concepts, analyzing data, and performing other appropriate activities. The research will translate end-user needs into preliminary technical specifications and clearly define the technology's market and technical risks as well as its energy, environmental, and economic advantages. These findings are expected to support a solid, credible justification for moving the technology forward. (Alternatively, the study may identify any barriers for development of the topic technology). The results of the study must illustrate a path forward introducing the new technology into the marketplace. DOE expects that the results of the study will be published. Any proprietary data delivered to DOE that will be used in preparation of the study will be protected from public disclosure pursuant to the clause Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), which will be included in any Agreement awarded under this FOA.

The maximum DOE share for one such concept study is not to exceed \$300,000. The duration of concept definition studies should not exceed one year. The proposed concept definition study should address a technology applicable to one of the following three categories:

- Equipment and software
- Power supply chain
- Cooling

II. Information and Communications Technologies R&D For Energy Efficiency

The energy used by our nation's vital telecommunications and data sector is growing at an alarming rate. As information technology and communications services continue to converge, these industries face increasingly similar challenges to control the power usage of their microprocessors or servers and supporting power and cooling systems. The electricity consumed in data centers and telecom systems is already three percent of the U.S. total and growing rapidly. In the face of growing global energy demand, uncertain energy supplies, and volatile

energy prices, innovative solutions are needed to radically advance the energy efficiency of these systems, which represent the engine of the American economy today. Enhanced energy efficiency of our information and communications technology (ICT) systems will enhance U.S. energy and economic security. Candidate technologies for ICT R&D for Energy Efficiency must be at stage three or higher, as defined by ITP Stage-Gate Innovation Management Guidelines.

Proposals for research and development in the following areas are sought:

1. Equipment and Software

Computing hardware and software are the functioning components of server-based data and telecommunications centers and largely determine power and cooling requirements. Achieving high levels of energy performance will require novel approaches to the design and management of these hardware and software systems. The key theme and approach in this area is to minimize heat generation in the first place. Thus, energy will be saved by developing novel systems that generate less heat (i.e., new electronic circuitry which will use less energy by increasing chip output per unit of power used) or are impervious to heat, or by the use of optics only. These include, but are not limited to:

- Develop all-optical systems to increase energy efficiency.
- Advance ultra-low power circuits like multi-phase clock asynchronous circuits to increase energy efficiency.
- Utilize ultra-efficient nano-electronic circuitry, including nano-based information storage devices, wires and graphene-based systems.
- Create hardened electronic equipment which can withstand temperature, humidity and particulate conditions outside the boundary of current generation electronics. Thus server-based systems can operate without air conditioning in environments worldwide, even high temperature environments.

2. Power Supply Chain

Data and telecommunications equipment require large quantities of electricity to be conditioned, converted, and delivered to the diverse components, including servers, switches, routers, and hard drives. The power supply chain can include electricity purchased from the grid, backup power, onsite-power generation, switchgear, UPS's, power distribution systems, rack-level and unit-level power supplies, and power management technology. Traditionally, data centers have used AC power distribution systems and telecommunications centers have used DC power. The R&D proposals for power supply energy efficiency may address the following, but are not limited to:

- Research and develop high-efficiency power conversion circuits which optimize server-based data center and telecom equipment.
- Develop special purpose chips, multiphase clocking, ternary/other processing modes, lower-power chips (noted in part under hardware and software).
- Research the use of optical switching to eliminate many conversion steps & losses (Also noted under hardware and software).
- R&D of superconducting components.
- Efficiency optimized control systems for power conversion.

3. Cooling

Cooling is believed to account for 25% or more of all power consumed by information technology, telecommunications, and data centers. The cooling of server-based telephone central offices and data centers can be made more energy efficient by the following, but are not limited to:

- Create advanced component level cooling technologies.
- Develop mitigation techniques to reduce the probability of failures associated with “free” cooling.
- Identify and create effective uses of low-quality waste heat generated.

Each R&D application MUST include organizational participants capable of and experienced in 1) research, 2) manufacturing the technology proposed, 3) bringing the technology to the end user through sales and marketing, and 4) serving as an end user of the technology proposed.

Each R&D project will be funded for a maximum of two (2) years, with one or more budget periods. Certain first-produced technical data developed under this Topic will be protected from public disclosure for up to five (5) years from the date the data were first produced, as set forth in Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D).

III. Demonstration and Field Testing of Highly Energy Efficient and Emerging Technologies for Data Center or Telecommunication Use

DOE is interested in field testing and independently validating the energy performance of emerging technologies that show the potential to improve energy efficiency while not compromising data center or telecommunication reliability. The demonstration sites will be early adopters of the technologies and must be willing to share information about the cost-benefit results of the field-tested technology projects so as to encourage more rapid market acceptance of the technologies. The selected applicants will supply performance data to enable DOE to prepare an independent performance validation and a companion case study as a specific project task. Accordingly, DOE will work with the demonstration teams to develop case studies of the technology projects using measured and verified results so as to reduce market and technology risk.

The applicants must show a plan for the technologies to be demonstrated and the adoption of other best energy management practices to improve a data/telecommunication center’s energy intensity performance (energy consumed for a given level of useful computational work) by more than 25 percent and have a Data Center Infrastructure Efficiency [DCiE = IT (useful work) energy / total facility energy usage] of 0.80 or greater. Proposers are encouraged to use the DOE DC Pro tool (see www.eere.energy.gov/datacenters) to substantiate the amount of energy efficiency improvement (e.g., DCiE improvement and IT work productivity) and how the proposed installation of technologies along with a comprehensive energy management program will achieve the energy efficiency goal.

New and innovative technologies that are not currently widely commercial and that improve the following parts of a data center or telecommunication facility will be considered for DOE’s cost sharing:

- Information Technology (IT) Optimization. This could include, but not be limited to: server virtualization, data storage and networking optimization schemes, methods in connecting multiple data centers (e.g., “cloud computing”) or any technology and IT optimization system that will result in less heat generation for a given amount of computational work load.
- Energy efficient electrical power distribution and supply. This could include, but not be limited to, more energy efficient electrical power supply to the IT or telecommunication equipment through new power transformation and back up technologies by reducing overall power distribution supply and IT system energy losses.
- Energy efficient cooling schemes. This could include, but not be limited to: more energy efficient cooling of IT/telecommunication equipment by more optimally delivering and/or controlling cooling to IT equipment.
- Distributed generation or alternative power technologies. New innovative combined heat and power or renewable energy technologies that are optimized for data center/telecommunication use and reduce overall source energy consumption and carbon emissions are desired to be demonstrated.

Technology demonstrations must be able to be widely replicated in other data centers throughout the United States and not be niche applications.

The demonstration teams must be willing to cooperate with DOE to perform an independent performance validation and to create case studies, making the results of the demonstration public. Any proprietary data delivered to DOE that will be used in preparation of the study will be protected from public disclosure pursuant to the clause Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), which will be included in any Agreement awarded under this FOA. Demonstration teams must also be willing to conduct public tours of the demonstration site(s) for up to 2 years after the technology demonstration case study is prepared.

Partnerships should be formed between the technology development teams and potential Federal and non-governmental demonstration and field test host sites.

IV. General Information

It is anticipated that awards will last one year for ICT concept definition studies, two years for R&D projects and two years for demonstration projects for a total Federal share of \$50 million.

Awards under this FOA will be funded, in whole or in part, with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). Be advised that special terms and conditions may apply to projects funded by the Act relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Prohibition on use of funds for gambling establishments, aquariums, zoos, golf courses or swimming pools;
- Ensuring that iron, steel and manufactured goods are produced in the United States;
- Ensuring wage rates are comparable to those prevailing on projects of a similar character;

- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

The exact terms and conditions will be provided when available.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

- DOE anticipates awarding grants under this program announcement.

B. ESTIMATED FUNDING Approximately \$50 Million is expected to be available for new awards under this announcement.

C. MAXIMUM AND MINIMUM AWARD SIZE Ceiling (i.e., the maximum amount for an individual award made under this announcement): \$10 Million

- Floor (i.e., the minimum amount for an individual award made under this announcement): None

D. EXPECTED NUMBER OF AWARDS

- DOE anticipates making 5-15 awards under this announcement depending on the size of the awards.

E. ANTICIPATED AWARD SIZE

- The anticipated award size for projects under each Program/Topic Area in this announcement is:

<u>Program/Topic Area</u>	<u>Award Size</u>
I. Concept Definition Studies	Max DOE share of \$300,000
II. Information and Communications Technologies R&D	Max DOE share of \$10 Million
III. Demonstration and Field Testing	Max DOE share of \$10 Million

F. PERIOD OF PERFORMANCE

- The anticipated period of performance for projects under each Program/Topic Area in this announcement is:

<u>Program/Topic Area</u>	<u>Period of Performance</u>
I. Concept Definition Studies	Up to 1 year (12 months)
II. Information and Communications Technologies R&D	Up to 2 years (24 months)
III. Demonstration and Field Testing	Up to 2 years (24 months)

G. TYPE OF APPLICATION

- Only new applications will be accepted under this announcement (e.g., applications for renewals of existing DOE funded projects will not be considered).

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS.

All types of domestic entities are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

B. COST SHARING

Because activities under this announcement are receiving funds appropriated by the Recovery Act, cost share requirements are as follows for each specific topic area:

I. Concept Definition Studies: Non-Federal cost share for concept definition studies is required to be 20% or higher of total allowable costs for all recipients. However, applications with proposed cost share as low as 10% recipient share shall be considered, using the Secretary's statutory authority to reduce cost-share requirements. The recipient's share of allowable costs must come from non-Federal sources, unless otherwise allowed by law. The sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project. Applicants proposing a cost-share below 20% recipient share shall provide a justification for their request.

II. Information and Communications Technologies R&D: Non-Federal cost share for applied research and development activities is required to be 20% or higher of total allowable costs for all recipients. However, applications with proposed cost share as low as 10% recipient share shall be considered, using the Secretary's statutory authority to reduce cost-share requirements. The recipient's share of allowable costs must come from non-Federal sources, unless otherwise allowed by law. The sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project. Applicants proposing a cost-share below 20% recipient share shall provide a justification for their request.

III. Demonstration and Field Testing: The recipient cost share is required to be 50% or higher of the total allowable costs of the project (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable costs of the projects) and must come from non-Federal sources unless otherwise allowed by law. However, applications with proposed cost share as low as 25% recipient share shall be considered, using the Secretary's statutory authority to reduce cost-share requirements. Applicants proposing a cost-share below 50% recipient share shall provide a justification for their request.

C. OTHER ELIGIBILITY REQUIREMENTS

- **Federally Funded Research and Development Center (FFRDC) Contractors**

FFRDC contractors are not eligible for an award under this announcement, but they may be proposed as a team member on another entity's application subject to the following guidelines:

Authorization for non-DOE FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this

authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award. Save the authorization in a single file named "FFRDC_Auth.pdf," and attach.

Authorization for DOE FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complementary to the missions of the laboratory, will not adversely impact execution of the DOE assigned programs at the laboratory."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE will fund a DOE FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant's cost share requirement will be based on the total cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

FFRDC Contractor Effort:

- The FFRDC contractor effort, in aggregate, must be less than 50% of the total estimated cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

D. MULTIPLE PRINCIPAL INVESTIGATORS

The assignment and use of multiple Principal Investigators (PIs) in projects awarded under this FOA is allowed. The applicant, whether a single organization or team/partnership/consortium, must however indicate in the application if the project will include multiple PI's. (See Part IV, Section C. 3.c.) The decision to use multiple PIs for a project is the sole responsibility of the applicant. If multiple PI's will be designated, the application must identify in the application the Contact PI/Project Coordinator and provide a "Coordination and Management Plan" that describes the organization structure of the project as it pertains to the designation of multiple PI's. This plan should, at a minimum, include:

- Process for making decisions on scientific/technical direction
- Publications;
- Intellectual property issues;
- Communication plans'

- Procedures for resolving conflicts; and
- PI's roles and administrative, technical and scientific responsibilities for the project

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION FORMS

The Adobe Application Package is provided as a separate attachment to this Funding Opportunity Announcement (on FedConnect).

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent

- Letters of Intent are not required.

2. Pre-application

- A pre-application is not required.

C. CONTENT AND FORM OF APPLICATION

The Adobe Application Package is provided as a separate attachment to this Funding Opportunity Announcement (on FedConnect).

You must complete the mandatory forms and any applicable optional forms, in accordance with the instructions on the forms and the additional instructions below, as required by this FOA. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

1. SF 424 - Application for Federal Assistance

Complete this form first to populate data in other forms. Complete all required fields in accordance with the pop-up instructions on the form. The list of certifications and assurances referenced in Field 21 can be found at http://management.energy.gov/business_doe/business_forms.htm, under Certifications and Assurances.

2. Project/Performance Site Location(s)

Indicate the primary site where the work will be performed. If a portion of the project will be performed at any other site(s), identify the site location(s) in the blocks provided. **Note** that the Project/Performance Site Congressional District is entered in the format of the 2 digit state code followed by a dash and a 3 digit Congressional **district code, for example VA-001.**

3. Other Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on “Add Mandatory Other Attachment” to attach the Project Narrative. Click on “Add Optional Other Attachment,” to attach the other files.

a. Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). Applicants are cautioned that this document should not include any proprietary information, trade secrets, or other confidential business, financial or sensitive information, since this summary may be subject to public disclosure under the Freedom of Information Act (FOIA). The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. Save this information in a file named “Summary.pdf,” and click on “Add Optional Other Attachment” to attach.

b. Project Narrative File - Mandatory Other Attachment

The project narrative must not exceed 20 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right). EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE. The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named “Project.pdf,” and click on “Add Mandatory Other Attachment” to attach.

The project narrative must include:

- Project Objectives.
This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.
- Merit Review Criterion Discussion.
The section should be formatted to address each of the merit review criterion and sub-criterion listed in Part V. A. below. Provide sufficient information so that reviewers will be able to evaluate the application in accordance with these merit review criteria. DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION AND SUB-CRITERION.

Criterion 1: Technical Merit

Weight: 20%

- Discuss how the proposed technology will address the technical area(s) of interest outlined in the announcement and its potential superiority over currently used technology/ies, if applicable.
- Provide a thorough Statement of Project Objectives (SOPO) and

anticipated outcome and results.

- Discuss the feasibility of the proposed work and its technical innovation (scientific basis).
- Provide evidence of the “game changing” quality of the proposed technology.

Criterion 2: Potential Benefits

Weight: 20%

- The potential job creation opportunities of the proposed project in the short-term (12 to 18 months), and of the technology in the long term, are addressed later in the narrative discussion under “American Recovery and Reinvestment Act (ARRA) Information”, and may just be referenced at this point in the narrative.
- Discuss the potential economic benefits of the proposed technology over the current technology, and its initial capital cost advantage to stimulate demand for the technology.
- Provide estimated energy savings (in TBtu or kWh per year), with a minimum potential energy impact of 1 billion kWh per year across U.S. information and communication technology facilities.

For demonstration projects: Provide evidence of the ability of the technology/ies and adopted best energy management practices to improve the existing Data Center infrastructure Efficiency (DCiE) to 0.80 or greater, and to improve the facility’s energy intensity performance (energy consumed for a given level of useful computational work) by more than 25 percent.

- Discuss the potential of the proposed technology to reduce greenhouse gas emissions and other environmental emissions, in comparison to the technology/ies currently in commercial use. Complete and valid assumptions used in estimating the benefits ascribed to the technology should also be provided.

Criterion 3: Commercialization and Market Acceptance Weight: 15%

- Provide a commercialization strategy for the proposed technology and the intellectual property rights and/or institutional alliances to required to execute the strategy. The responsible team members for this function must be clearly defined. The commercialization plan must be in alignment with the technical work plan, and must include a discussion of the Stage Gate process that will be used to plan the tasks, monitor the progress, and identify critical milestones.
- Discuss the viability of the proposed technology to meet the needs of the target market in a cost effective manner considering potential technical, regulatory, economic, environmental, production or other issues.
- Provide evidence of the corporate commitment to the proposed project from inception through commercialization.

Criterion 4: Technical Approach/ Project Management Plan Wt: 25%

- Discuss the validity and completeness of the proposed technical approach and likelihood of success based on the current status of the proposed technology.

- This sub-criterion (regarding Project Management Plan) is covered under the “Project Management Plan” (See Part IV, Section C.3.j) – and may just be referenced at this point in the narrative.
- Discuss the work and budget distribution among the team members to accomplish the stated objectives.

Criterion 5: Qualifications and Resources

Weight: 20%

- Provide evidence of the capability and experience of organizational participants in 1) research, 2) manufacturing, 3) bringing the technology to the end user through sales and marketing, and 4) ability to serve as an end user of the technology. NOTE TO APPLICANTS: ITP has created a web site to enable organizations intending to submit an application in response to this solicitation to partner with other organizations with complementary capabilities. This web site is at http://sites.energetics.com/ICT_matchmaker09/
- Provide evidence of organizational experience in similar projects which led to successful technology development and commercialization or technology transfer.
- Discuss the level of experience and availability of key personnel to complete the proposed project, including personnel involved in technical, commercialization and/or technology transfer.
- Demonstrate the adequacy (quality, availability and appropriateness) of facilities and equipment to accommodate the proposed project.

- American Recovery and Reinvestment Act (ARRA) Information:

This section should address how the project will promote and enhance the objectives of the American Recovery and Reinvestment Act of 2009, P.L. 111-5, especially job creation and/or preservation, and economic recovery in an expeditious manner. The response must include quantitative data (i.e. nature and type of position, duration of employment, and salary) supporting the number of jobs created and/or preserved, as well as data supporting any other direct economic recovery impacts attributable to the performance of the project.

The above listed components of your Project Narrative combined, must be within the Narrative page limit specified above. Documents listed below may be included as clearly marked appendices to your Narrative and will not count towards the Project Narrative page limit. Please note that some of the required documents listed below may have their own page limits to which you must adhere.

c. Resume File

Provide a resume for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all resumes in a single file named “resume.pdf” and click on “Add Optional Other Attachment” to attach. Each resume must not exceed 2 pages when printed on 8.5” by 11” paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and should include the following information, if applicable:

Education and Training. Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

Of the key personnel identified in this file, indicate the Principal Investigator(s) (PI). If multiple PI's are proposed, the applicant must provide the information indicated in Part III, Section D. as part of this file.

The resume file does not have a page limitation.

d. Budget File

SF 424 A Excel, Budget Information – Non-Construction Programs File

You must provide a separate budget for each year of support requested and accumulative budget for the total project period. Use the SF 424 A Excel, “Budget Information – Non Construction Programs” form on the Applicant and Recipient Page at http://management.energy.gov/business_doe/business_forms.htm. You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G). Save the information in a single file named “SF424A.xls,” and click on “Add Optional Other Attachment” to attach.

e. Budget Justification File

A Budget Justification for SF 424A must be provided for the costs proposed in each Object Class Category/Cost Classification category (e.g., identify key persons and personnel categories and the estimated costs for each person or category; provide a list of equipment and cost of each item; identify proposed subaward/consultant work and cost of each subaward/consultant; describe purpose of proposed travel, number of travelers and number of travel days; list general categories of supplies and amount for each category; and provide any other information you wish to support your budget). Provide the name of your cognizant/oversight agency, if you have one, and the name and phone number of the individual responsible for negotiating your indirect rates as

part of the budget justification or under the comments under the Indirect tab of the Budget Justification form.

Applications shall provide information which validates that all laborers and mechanics on projects funded directly by or assisted in whole or in part by and through funding appropriated by the Recovery Act are paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by subchapter IV of Chapter 31 of title 40, United States Code (Davis-Bacon Act). For guidance on how to comply with this provision, see <http://www.dol.gov/esa/whd/contracts/dbra.htm>.

To satisfy this requirement, please provide a written affirmation that you will comply with the Davis-Bacon Act, as identified above, along with the signature of the authorized representative of your organization.

The Excel format provided as PMC 123.1, Budget Justification for SF 424A, at <https://www.eere-pmc.energy.gov/forms.aspx>, is recommended but not required for use in providing this budget justification. Save the information in a single file named BudgetJustification.xls (or other file name as applicable), and click on “Add Optional Other Attachment” to attach.

f. Letters of Commitment

You must have a letter from each third party contributing cost sharing (i.e., a party other than the organization submitting the application) that proposes to provide all or part of the required cost sharing. **All Letters of Commitment must be attached to the Project Narrative File.** The letter must state that the third party is committed to providing a specific minimum dollar amount of cost sharing. In the budget justification, identify the following information for each third party contributing cost sharing: (1) the name of the organization; (2) the proposed dollar amount to be provided; (3) the amount as a percentage of the total project cost; and (4) the proposed cost sharing – cash, services, or property. Letters of Commitment from parties participating in the project, exclusive of vendors, who will not be contributing cost share, but will be integral to the success of the project must be included as part of this Appendix to the Narrative. Letters of Commitment will not count towards the Project Narrative page limit.

g. Subaward Budget File(s)

You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). Use the SF 424 A Excel for Non Construction Programs or the SF 424 C Excel for Construction Programs.

These forms are found on the Applicant and Recipient Page at <https://www.eere-pmc.energy.gov/forms.aspx>. Save each Subaward budget in a separate file. Use up to 10 letters of the subawardee’s name (plus424.xls) as the file name (e.g., ucla424.xls or energyres424.xls). Click on “Add Optional Other Attachment” to attach each file.

A budget justification for the subaward budget is also required. The Excel format provided as PMC 123.1, Budget Justification for SF 424A, at <https://www.eere-pmc.energy.gov/forms.aspx>, is recommended but not required for use in providing this budget justification. Save the information in a single file named BudgetJustification.xls (include brief name of sub as part of file name), and click on “Add Optional Other Attachment” to attach.

h. Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable

If a FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. This order and the DOE Field Work Proposal form are available at the following link:

<http://www.management.energy.gov/documents/o4121.pdf>. Use up to 10 letters of the FFRDC name (plus .pdf) as the file name (e.g., lanl.pdf or anl.pdf), and click on “Add Optional Other Attachment” to attach.

i. Authorization for non-DOE or DOE FFRDCs

Save the Authorization for non-DOE or DOE FFRDCs, as specified in Part III.C. Other Eligibility Requirements, in a single file named “FFRDC_Auth.pdf” and click on “Add Optional Other Attachment” to attach.

j. Project Management Plan

This plan should identify the activities/tasks to be performed, a time schedule for the accomplishment of the activities/tasks, the spending plan associated with the activities/tasks, and the expected dates for the release of outcomes. Applicants may use their own project management system to provide this information. This plan should identify any decision points and go/no-go decision criteria. Successful

applicants must use this plan to report schedule and budget variances. Save this plan in a single file named “pmp.pdf” and click on “Add Optional Other Attachments” to attach.

k. Project Partners

Provide a table identifying all team members and their respective roles. Save this plan in a single file named “TEAM.pdf” and click on “Add Optional Other Attachments” to attach.

l. SF-LLL Disclosure of Lobbying Activities

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying." The form is available in the optional document box on the grant application package page of grants.gov.

m. Cost Share Reduction Justification

If applicable, you must provide a cost share reduction justification if proposing less than the required amount (20% for Concept Definition Studies & R&D, and 50% for Demonstration and Field Testing applications) of cost share. Justifications must be signed by the person authorized to commit the expenditure of funds for the entity and be provided in a pdf format. Save this letter in a single file named “Just.pdf”, and click on “Add Optional Other Attachments” to attach.

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
SF 424 - Application for Federal Assistance	Part of Adobe Application Package	
Project/Performance Site Location(s)	Part of Adobe Application Package	
Other Attachments Form: Attach the following files to this form:		See Instructions
Project Summary/Abstract File	PDF	Summary.pdf
Project Narrative File, including required appendices (including ARRA discussion and Letters of Commitment)	PDF	Project.pdf
Resume File	PDF	Resume.pdf
SF 424A Excel – Budget Information for Non-Construction Programs File	Excel	SF424A.xls
Budget Justification File	As applicable	See Instructions
Subaward Budget File(s), if applicable	Excel	See Instructions
Budget for Federally Funded Research and Development Center (FFRDC) Contractor File, if applicable.	PDF	See instructions
Authorization from cognizant Contracting Officer for FFRDC, if applicable.	PDF	FFRDC_Auth.pdf

Project Partners	PDF	TEAM.pdf
Project Management Plan	PDF	PMP.pdf
SF-LLL Disclosure of Lobbying Activities	PDF	SF-LLL.pdf
Cost Share Reduction Justification	PDF	Just.pdf

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Environmental Questionnaire

E. SUBMISSION DATES AND TIMES

Pre-application Due Date

- Pre-applications are not required.

Application Due Date

- Applications must be received by July 21, 2009, 11:59 PM Eastern Time. You are encouraged to transmit your application well before the deadline. **APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

F. INTERGOVERNMENTAL REVIEW

- This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS

Cost Principles. Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. The cost principles for commercial organization are in FAR Part 31.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH FEDCONNECT TO BE CONSIDERED FOR AWARD (unless you have system-to-system capability with Grants.gov). Submit electronic applications through the FedConnect portal. Information regarding how to submit applications via Fed Connect can be found at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

Further, it is the responsibility of the applicant, prior to the Application due date and time, to verify successful transmission.

2. Registration Process Requirements

To submit an application in response to this FOA, Applicants must be registered with FedConnect. Before you can register with FedConnect, you will need the following:

- A. Your company's DUNS (including plus 4 extension if applicable). If you don't know your company's DUNS or if your company does not have a DUNS you can search for it or request one at <http://fedgov.dnb.com/webform/displayHomePage.do>.
- B. A federal Central Contractor Registration (CCR) account. If your company is not currently registered with CCR, please register at www.ccr.gov before continuing with your FedConnect registration.
- C. Possibly, your company's CCR Marketing Partner Identification Number (MPIN). If you are the first person from your company to register, FedConnect will need to create a company account. Only a person who knows your company's CCR MPIN can do this. To find out who this is in your company, go to <http://www.ccr.gov/> and click **Search CCR**. Once you've found your company, locate the Electronic Business Point of Contact.

After the initial FedConnect account is created, employees can register themselves without the MPIN. If you are not sure whether your company has an account with FedConnect, don't worry. Complete the registration form and FedConnect will let you know (PLEASE REFER TO QUICK START GUIDE FOR QUESTIONS).

Applicants who are not registered with CCR and FedConnect, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible. For those Applicants already registered in CCR, the CCR registration must be updated annually at <http://www.ccr.gov/Renew.aspx>.

Part V - APPLICATION REVIEW INFORMATION

A. REVIEW CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement. If an application fails to meet these requirements, it may be deemed non-responsive and eliminated from full Merit Review.

2. Merit Review Criteria

Applications will be evaluated against the merit review criteria shown below.

Criterion 1: Technical Merit

Weight: [20%]

- Completeness of the discussion of how the proposed technology will address the technical area(s) of interest outlined in the announcement and its potential superiority over currently used technology/ies, if applicable.
- Thoroughness of the proposed Statement of Project Objectives (SOPO) and the anticipated outcome and results.
- Feasibility of the proposed work and technical innovation (scientific basis).
- The “game changing” quality of the proposed technology.

Criterion 2: Potential Benefits

Weight: [20%]

- The potential job creation opportunities of the proposed project in short-term (12 to 18 months) and of the technology in the long term, are addressed later in the narrative discussion under “American Recovery and Reinvestment Act (ARRA) Information”, and may just be referenced at this point in the narrative.
- The potential economic benefits of the proposed technology over the current technology, and its initial capital cost advantage to stimulate demand for the technology.
- Estimated energy savings (in TBtu or kWh per year), with a minimum potential energy impact of 1 billion kWh per year across U.S. information and communication technology facilities.

For demonstration projects: Ability of the technology/ies and adopted best energy management practices to improve the existing Data Center infrastructure Efficiency (DCiE) to 0.80 or greater, and to improve the facility’s energy intensity performance (energy consumed for a given level of useful computational work) by more than 25 percent.

- Potential of the proposed technology to reduce greenhouse gas emissions and other environmental emissions, in comparison to the technology/ies currently in commercial use. The completeness and validity of assumptions used in estimating the benefits ascribed to the technology.

Criterion 3: Commercialization and Market Acceptance

Weight: [15%]

- Adequacy of the commercialization strategy for the proposed technology and of the intellectual property rights and/or institutional alliances to execute the

strategy. The responsible team members for this function must be clearly defined. The commercialization plan must be in alignment with the technical work plan, and must include a discussion of the Stage Gate process that will be used to plan the tasks, monitor the progress, and identify critical milestones.

- The viability of the proposed technology to meet the needs of the target market in a cost effective manner considering potential technical, regulatory, economic, environmental, production or other issues.
- Evidence of the corporate commitment to the proposed project from inception through commercialization.

Criterion 4: Technical Approach/ Project Management Plan **Weight: [25%]**

- Validity and completeness of the proposed technical approach and likelihood of success based on the current status of the proposed technology.
- Adequacy, reasonableness and soundness of the proposed Project Management Plan that has milestones and interrelated tasks identified that will lead to the successful accomplishment of the project objectives.
- Adequacy, appropriateness, and reasonableness of the proposed work and budget distribution among the team members to accomplish the stated objectives.

Criterion 5: Qualifications and Resources **Weight: [20%]**

- Capability and experience of organizational participants in 1) research, 2) manufacturing, 3) bringing the technology to the end user through sales and marketing, and 4) ability to serve as an end user of the technology.
- Evidence of organizational experience in similar projects which led to successful technology development and commercialization or technology transfer.
- Level of experience and availability of key personnel to complete the proposed project, including personnel involved in technical, commercialization and/or technology transfer.
- Adequacy (quality, availability and appropriateness) of facilities and equipment to accommodate the proposed project.

3. Other Selection Factors

The selection official may consider the following program policy factors in the selection process:

- i. Relevance to President's Carbon Reduction Goals and EPC Act 2005:* Project contributes to ITP's goal to drive a 25% reduction in U.S. industrial energy intensity by 2017 in support of EPC Act 2005 and the President's carbon reduction goals through voluntary partnerships with industry.
- ii. Impact on Manufacturing Supply Chain:* Project provides the potential to impact energy efficiency, carbon reduction, and economic competitiveness throughout all parts of the US economy; domestic manufacturing supply chain, commercial business and transportation sectors.
- iii. Cost Share:* Applicants with non-federal cost-share above the minimum may be given preferential consideration.

- iv. ***ITP Portfolio Diversity:*** Project provides needed portfolio diversity, contributes to portfolio balance across priority technical areas, and /or provides needed adjustment in portfolio risk profile to achieve desired balance with respect to technical approaches, stages of development and technical and commercialization risks.
- v. ***American Recovery and Reinvestment Act:*** ARRA 2009 Application Review Information Criteria – It is desirable to select applications which promote and enhance the objectives of the American Recovery and Reinvestment Act of 2009, P.L. 111-5, especially economic recovery in an expeditious manner. This would include the selection of projects that promote economic recovery, assist those most impacted by the recession, stabilize state and local government budgets or provide general economic benefit.

B. REVIEW AND SELECTION PROCESS

a. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is at <http://www.management.energy.gov/documents/meritrev.pdf>.

It is very important that those documents, Project Abstract and Project Narrative file, that will be used during the Merit Review Process do not contain any Personally Identifiable Information as described in Appendix B.

b. Selection

The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available.

c. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including, but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

- DOE anticipates notifying applicants selected for award by the end of October, 2009 and making awards by December, 2009.

Part VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE; 4. DOE assistance regulations at 10 CFR part 600; 5. National Policy Assurances To Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>), except for grants made to Federal Demonstration Partnership (FDP) institutions.

2. Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at <http://www.management.energy.gov/documents/specialtermsandcondition308.pdf>. The

National Policy Assurances To Be Incorporated As Award Terms are located at http://management.energy.gov/business_doe/1374.htm.

Special Provisions relating to work funded under American Recovery and Reinvestment Act of 2009, Pub. L. 111-5 shall apply and are located at http://management.energy.gov/policy_guidance/1672.htm. Also, the Office of Management and Budget may be promulgating additional provisions or modifying existing provisions. Those additions and modifications will be incorporated into the Special Provisions as they become available.

3. Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.doe.gov/financial_assistance_awards.htm.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The proposed Checklist for this program can be found at https://www.eere-pmc.energy.gov/procurenet/FinancialAssistance/Forms/DOE_Forms/DOEF4600_2.doc.

Awards under this FOA will be funded, in whole or in part, with funds appropriated by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act or Act). Be advised that special terms and conditions may apply to projects funded by the Act relating to:

- Reporting, tracking and segregation of incurred costs;
- Reporting on job creation and preservation;
- Publication of information on the Internet;
- Access to records by Inspectors General and the Government Accountability Office;
- Prohibition on use of funds for gambling establishments, aquariums, zoos, golf courses or swimming pools;
- Ensuring that iron, steel and manufactured goods are produced in the United States;
- Ensuring wage rates are comparable to those prevailing on projects of a similar character;
- Protecting whistleblowers and requiring prompt referral of evidence of a false claim to an appropriate inspector general; and
- Certification and Registration.

The exact terms and conditions will be provided when available.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the FedConnect portal. You must register with FedConnect submit questions and to view responses to questions. It is recommended that you register as soon after release of the FOA as possible to have the benefit of all responses. More information is available at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been distributed.

Questions pertaining to the **submission** of applications through FedConnect should be directed by e-mail to support@FedConnect.net or by phone to FedConnect Support at 1-800-899-6665.

B. AGENCY CONTACT(S)

Name: Anne Elkins
E-mail: ITP_ITC@go.doe.gov

PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the FedConnect portal. You can receive an email when a modification or an announcement message is posted by registering with FedConnect as an interested party for this FOA. It is recommended that you register as soon after release of the FOA as possible to ensure you receive timely notice of any modifications or other announcements.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. For awards involving research, development or demonstration, the government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.) For this FOA, DOE anticipates issuing a “class patent waiver”, as appropriate, for example for those awardees cost-sharing at least 20% and who agree to a substantial US manufacturing provision for new technology made under an award. The patent clause that will apply in the event of a patent waiver can be found at <http://www.gc.doe.gov/documents/patwaivclau.pdf>

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. For Topic Areas 1 and 3, the government will have unlimited rights in the technical data first produced under agreements awarded under this FOA. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes. Topic Area 2 is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to five (5) years from the date of its development, of first-produced data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), will apply to an award made under this announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and may also identify data that will be recognized by the parties as protected data. For National Laboratories and FFRDCs, the data rights clause in Applicant’s Management and Operating (M&O) Contract will apply.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

DOE intends to issue a class waiver for Agreements awarded under this FOA, which DOE expects will cover most, if not all, prime Recipients and team members, where teaming arrangements exist. If a class waiver is not issued or a prime Recipient or team member does not qualify for the class waiver, an Applicant, including team members other than the prime Recipient, may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the prime Recipients and team members will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784. Additionally, DOE's patent waivers will include a U.S. competitiveness provision reflecting DOE's programmatic objectives; e.g., improving the competitive position as well as the U.S. employment opportunities in U.S. industries.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY

DOE reserves the right to conduct an independent third party review of financial capability for applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

I. NOTICE OF POTENTIAL DISCLOSURE UNDER FREEDOM OF INFORMATION ACT

Applicants should be advised that identifying information regarding all applicants, including applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such applicants are selected for negotiation of award.

REFERENCE MATERIAL

Appendix A – Definitions

“Amendment” means a revision to a Funding Opportunity Announcement

"Applicant" means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Application" means the documentation submitted in response to a Funding Opportunity Announcement.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s E-Business Point of Contact designated in the CCR.

"Award" means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

"Budget" means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

"Consortium (plural consortia)" means the group of organizations or individuals that have chosen to submit a single Application in response to a Funding Opportunity Announcement.

"Contracting Officer" means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and non-program aspects of the Financial Assistance process.

"Cooperative Agreement" means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity.

"Cost Sharing" means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

“Central Contractor Registration (CCR)” is the primary database which collects, validates, stores and disseminates data in support of agency missions. Funding Opportunity Announcements which require application submission through FedConnect or Grants.gov require that the organization first be registered in the CCR at <http://www.grants.gov/CCRRegister>.

“Credential Provider” is an organization that validates the electronic identity of an individual through electronic credentials, PINS, and passwords for Grants.gov. Funding Opportunity Announcements which require application submission through Grants.gov require that the individual applying on behalf of an organization first be registered with the Credential Provider at <https://apply.grants.gov/OrcRegister>.

“Data Universal Numbering System (DUNS) Number” is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the CCR. Call 1-866-705-5711 to receive one free of charge. http://www.grants.gov/applicants/request_duns_number.jsp

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the CCR registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to submit grant applications on behalf of their organization through Grants.gov.

“E-Find” is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/search/searchHome.do>

“Financial Assistance” means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-awards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“FedConnect” is where federal agencies post opportunities and make awards via the web. Any Applicant can view public postings without registering. However, registered users have numerous added benefits including the ability to electronically submit Applications / Responses to the government directly through this site. <https://www.fedconnect.net/FedConnect/>

“Federally Funded Research and Development Center (FFRDC)” means a research laboratory as defined by Federal Acquisition Regulation 35.017.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

“Grant” means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access

point for over 900 grant programs offered by the 26 Federal grant-making agencies.

<http://www.grants.gov>

“Industry Interactive Procurement System (IIPS)” is DOE’s Internet-based procurement system which allows access to DOE’s business opportunities database, allows user registration and submittal of Applications: <http://e-center.doe.gov/>.

"Key Personnel" means the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

“Marketing Partner Identification Number (MPIN)” is a very important password designated by your organization when registering in CCR. The E-Business Point of Contact will need the MPIN to login to Grants.gov to assign privileges to the individual(s) authorized to submit applications on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

"Participant" for purposes of this Funding Opportunity Announcement only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Funding Opportunity Announcement.

“Principal Investigator” refers to the technical point of contact/Project Manager for a specific project award.

"Project" means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

“Proposal” is the term used in IIPS meaning the documentation submitted in response to a Funding Opportunity Announcement. Also see Application.

“Recipient” means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

"Selection" means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

"Selection Official" means the DOE official designated to select Applications for negotiation toward Award under a subject Funding Opportunity Announcement.

"Substantial Involvement" means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

“Technology Investment Agreement (TIA)” is a new type of assistance instrument for DOE, but they have been used by the Department of Defense for many years to support or stimulate research projects involving for-profit firms, especially commercial firms that do business primarily in the commercial marketplace. TIAs are different from grants and cooperative agreements in that the award terms may vary from the Government-wide standard terms (See DOE TIA regulations at 10 CFR Part 603). The primary purposes for including a TIA in the type of available award instruments are to encourage non-traditional Government contractors to participate in an R&D program and to facilitate new relationships and business practices. A TIA can be particularly useful for awards to consortia (See 10 CFR 603.225(b) and 603.515, Qualification of a consortium).

"Total Project Cost" means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

Appendix B – Personally Identifiable Information

In responding to this Announcement, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. These documents will be used by the Merit Review Committee in the review process to evaluate each application. PII is defined by the Office of Management and Budget (OMB) and DOE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

- a. **Public PII:** PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.
- b. **Protected PII:** PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee.

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual

- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a program describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Appendix C – Cost Share Information

Cost Sharing or Cost Matching

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE almost always uses the term “cost sharing,” as it conveys the concept that **non-federal share is calculated as a percentage of the Total Project Cost**. An exception is the State Energy Program Regulation, 10 CFR Part 420.12, State Matching Contribution. Here “cost matching” for the non-federal share is calculated as a percentage of the federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. Following is an example of how to calculate cost sharing amounts for a project with \$1,000,000 in federal funds with a minimum 20% non-federal cost sharing requirement:

Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost

Example: \$1,000,000 divided by 80% = \$1,250,000

Formula: Total Project Cost (\$) minus Federal share (\$) = Non-federal share (\$)

Example: \$1,250,000 minus \$1,000,000 = \$250,000

Formula: Non-federal share (\$) divided by Total Project Cost (\$) = Non-federal share (%)

Example: \$250,000 divided by \$1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. **Keep in mind that FFRDC funding is DOE funding.**

What Qualifies For Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR600.123;
- State and Local Governments are found at 10 CFR600.224;
- For-profit Organizations are found at 10 CFR600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, DOE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, DOE generally does not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

DOE Financial Assistance Regulations:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=98a996164312e8dcf0df9c22912852b0&rgn=div5&view=text&node=10:4.0.1.3.9&idno=10>

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

(A) *Acceptable contributions*. All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the recipient's cost sharing if such contributions meet all of the following criteria:

- (1) They are verifiable from the recipient's records.
- (2) They are not included as contributions for any other federally-assisted project or program.
- (3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.
- (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:
 - (a) *For-profit organizations*. Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit costs principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are not allowable unless specifically authorized in the award document.

(b) *Other types of organizations.* Allowability of costs incurred by other types of organizations that may be subrecipients under a prime award is determined as follows:

(i) *Institutions of higher education.* Allowability is determined in accordance with OMB Circular No. A-21 -- Cost Principles for Educational Institutions

(ii) *Other nonprofit organizations.* Allowability is determined in accordance with OMB Circular A-122, Cost Principles for Non-Profit Organizations

(iii) *Hospitals.* Allowability is determined in accordance with the provisions of 45 CFR Part 74, Appendix E, Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts with Hospitals

(iv) *Governmental organizations.* Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with OMB Circular No. A-87, Cost Principles for State, Local, and Indian Tribal Governments

(5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) *Valuing and documenting contributions*

(1) *Valuing recipient's property or services of recipient's employees.* Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:

(a) The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or

(b) The current fair market value. If there is sufficient justification, the contracting officer may approve the use of the current fair market value of the donated property, even if it exceeds the certified value at the time of donation to the project. The contracting officer may accept the use of any reasonable basis for determining the fair market value of the property.

(2) *Valuing services of others' employees.* If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.

(3) *Valuing volunteer services.* Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.

(4) *Valuing property donated by third parties.*

(a) Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.

(b) Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the contracting officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:

(i) The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.

(ii) The value of loaned equipment must not exceed its fair rental value.

(5) *Documentation.* The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:

(a) Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.

(b) The basis for determining the valuation for personal services and property must be documented.